

# ***Chapter 2***

## ***Overview and Background on GILS***

### **2.0. INTRODUCTION**

An understanding of the current status of U.S. Federal GILS implementation depends in part upon an understanding of the background of the GILS initiative. This chapter provides a brief history of GILS development as well as information about the policy context from which GILS sprang and which continues to affect its existence. Also included in this chapter is a selective review from the professional literature and popular press to indicate the ways in which the U.S. Federal implementation of GILS has been described and interpreted. This chapter, then, provides the overall context from which the investigators began the examination and assessment of GILS.

### **2.1. A BRIEF HISTORY OF GILS**

The concept of a government information locator service emerged from several streams of policy and initiatives within the Federal government dating back to the 1970s. The specifics of the current GILS efforts can be seen as evolving over time, and incorporating along the way the use of networked technologies, changes in information policy directives, and the continuing need of the public to know about and access government information.

#### **2.1.1. Paperwork Reduction, Public Access, and Information Resources Management**

The idea for creating some type of locator system for U.S. Federal government information has been in currency for many years. The origins of the current GILS initiative can be traced to information policy efforts, deriving primarily from the work of the Commission on Federal Paperwork (1977) and the *Paperwork Reduction Act* (PRA) of 1980. The 1980 PRA established the Federal Information Locator System (FILS), which was never successfully implemented (Bass & Plocher, 1991). Among the many reasons for its failure was that the statutory formulation of FILS called for a system whose data elements were only based on information collection requests; the scope of the original FILS was quite limited. FILS was a system

for finding and eliminating duplicate Federal information collection requests rather than *locating* information. Oriented toward government information inputs rather than outputs, FILS fell short of functioning as a useful locator system.

Although limited in scope, FILS provided a kernel for the concept of GILS in that it focused on agencies identifying their information resources and making those “inventories” of a limited set of their resources available. The FILS ideas spawned additional ideas and strategies for a government-wide locator system. One approach to locators emerged in the early 1990s with the publication of *Federal Information Inventory/Locator Systems: From Burden to Benefit* (McClure, et al., 1990), a study sponsored by the Office of Management and Budget (OMB). That report called for abandoning FILS and coined the term Government Information/Inventory System (GIILS) to describe a new approach that linked inventorying of agency resources and public access.

The 1990 study articulated a specific goal of a government information locator: to enable average citizens to find the government information resources they desired. The idea of a GILS started to receive widespread endorsement both within government circles and within the community of public interest research groups that wanted more and better access to government information. The report included a comprehensive policy review of legislation, regulations, agency guidelines, and other instruments related to government “locator systems” as of 1990.

Another impetus for a locator system was the ongoing efforts by citizens, researchers, librarians, government agencies, and many others to improve access to government information, particularly information in electronic formats. With the increasing amounts of electronic information being generated by the government and the slow pace at which more traditional finding aids for government information kept pace with electronic information, the public needed other mechanisms to assist them in identifying, locating, and accessing government agency information. The new information creation/production environment based on distributed computing and networks also brought

new challenges to traditional models of centralized access to and dissemination of government information (e.g., via the Superintendent of Documents).

Improving public access was a key issue at the 1991 White House Conference on Library and Information Services, where a recommendation was made for the “...federal government to provide comprehensive indexing and abstracting for all public documents to provide easy and equitable access for all individuals” (U.S. National Commission on Libraries and Information Science, 1992, p. 27). Conference attendees considered, but failed to accept, an amendment that urged, “...the federal government to require each agency to maintain an inventory of its publications and urge the federal government to compile and maintain a directory to these agency inventories” (p. 243).

Another outgrowth of the paperwork reduction effort was the development of the information resources management (IRM) concept, which viewed government information resources (both the technology and the data/information) as “assets” that needed to be “managed” as any other agency asset. The key policy statement on managing Federal information resources is the Office of Management and Budget (OMB) Circular A-130, “Management of Federal Information Resources,” first issued in 1985 with subsequent revisions in the 1990s (Office of Management and Budget, 1996b). To manage assets adequately, it is necessary to have comprehensive inventories of the assets. Based on the assumption that agencies would inventory their information resources as part of their management of those resources, those inventories could serve as a type of “locator” of information resources.

The link between IRM and enhancing public access to government information became quite clear. Agencies, in the course of implementing IRM policies, would inventory their information resources. Those inventories would be a precondition for adequately managing the resources. Having identified the resources in the inventories, those inventories could be used as a basis for developing finding aids, catalogs, and other locator mechanisms to improve public access to government information. Enhanced public access to

government information would require better and more complete inventories of government information. Information resources inventories could also assist agencies in their records management responsibilities.

In the 1990s, records management also began to emerge as a secondary objective of a GILS. In 1991, the National Historical Publications and Records Commission (1991, p. 13) identified the creation of metadata for managing records as an area for further research:

Research Question 4: How can data dictionaries, information resource directory systems, and other metadata systems be used to support electronic records management and archival requirements?

The report recognized that the metadata information needed to describe and control archival records may be similar to that used by data processing organizations for electronic records management. Descriptive data about agency information resources cast in the form of structured metadata became a centerpiece of the evolving GILS concept.

### 2.1.2. The Emerging Concept of GILS

Through the early 1990s, the concept of a government-wide information locator service began to take shape. Efforts by Federal agencies as well as two studies by the investigators contributed to the development of the concept.

Among Federal agencies, there was increasing interest in public access issues, in general, as well as interest in the development of some type of a “locator” to government information. One example that began in 1991 was the Interagency Working Group on Public Access, also known as the Solomons Island Group. This group of representatives from a number of Federal agencies met first in May, 1991 (Pesachowitz, 1992), later in November, 1991 (Okay & Williams, 1992), and again in July, 1992 (Phillips & Carroll, 1993). One initiative of the Solomons Island Group was to develop a policy framework for public access to government electronic information. The Working

Group also established subgroups—one of which was “locators and standards”—to further examine policy issues and possible guidelines for locators from an agency perspective. Also during this time period, other Interagency Working Groups such as CENDI explored the development of government wide locator systems. These, and possibly other agency-based efforts, added interest to, credibility about, and an impetus for the development of some type of a Government-wide Information Locator Service (GILS).

The National Archives and Records Administration (NARA), the General Services Administration (GSA), and OMB commissioned a study that resulted in the report, *Identifying and Describing Federal Information/Inventory Locator Systems: Design for Networked-Based Locators* (McClure, Ryan & Moen, 1992). This two volume report made specific recommendations for designing and establishing an agency-based, network-accessible locator system for government information that incorporated a decentralized model for a “virtual” government information locator service. The study recognized the potential of a locator that took advantage of the evolving networked environment. A subsequent discussion of the study, *Design for an Internet-Based Government-Wide Information Locator System* (McClure, Moen, & Ryan, 1992), detailed specific implementation steps for realizing the establishment of government locators in the networked environment.

When the Clinton Administration took office in 1993, a range of government information policy issues quickly took center stage. In its first month, the Administration announced that as part of its technology policy, “We are committed to using new computer and networking technology to make this [government] information more available to the taxpayers who paid for it” (Clinton & Gore, 1993, p. 29). The National Performance Review (NPR) stated that the Administration would, “...require agencies to inventory the federal information they hold, and make it accessible to the public” (Gore, 1993, p. 165). The concept of a government information locator service emerged whereby such a service would be a contribution to the emerging networked infrastructure, both nationally and globally, and would assist the government to do its

job more effectively and efficiently, especially in areas of IRM and public access to information. A report to the Information Infrastructure Task Force in May 1994 crystallized the Administration's thinking on the concept of an information locator system. The report envisioned GILS as a virtual locator, comprised of separate agency-based, network-accessible locators, that used standards for data content and computer communication for interoperable search and retrieval of metadata records (Information Infrastructure Task Force, 1994).

The Clinton Administration's *Agenda for Action* published as part of its National Information Infrastructure (NII) initiative stated (Information Infrastructure Task Force, 1993, p. 3):

*The Administration will seek to ensure that Federal agencies, in concert with state and local governments, use the NII to expand the information available to the public, so that the immense reservoir of government information is available to the public, easily and equitably.*

These, and other Clinton Administration policy initiatives, incorporated key ideas of GILS into its own information policy strategy.

The movement toward agency inventorying of information required government-wide agreement on a range of standards. These included data content standards for describing information resources as well as standard protocols by which networked systems could communicate, especially for purposes of interoperability of separately implemented agency-based GILS. In Fall 1993, the Public Access Forum Locator Subgroup (of the Solomons Island Group) was developing the content standards for GILS records, and work by the investigators under contract with the U.S. Geologic Survey moved to specify a standards-based technology and data content approach for GILS. The result of the latter work was a report, *The Government Information Locator Service (GILS): Expanding Research and Development on the ANSI/NISO Z39.50 Information Retrieval Standard* (Moen & McClure, 1994). Central to that report was an application profile for GILS (i.e., the GILS Profile) that specified how Z39.50 would be used in

GILS and defined a basic set of data elements comprising a record that would be used to describe agency information resources. The technical specifications for the use of Z39.50 for GILS appeared as *Federal Information Processing Standard Publication (FIPS Pub.) No. 192: Application Profile for the Government Information Locator Service* (National Institute for Standards and Technology, 1994).

ANSI/NISO Z39.50 is the American National Standard that defines a computer protocol for information retrieval (National Information Standards Organization, 1995; see Moen, 1995b for brief introduction to Z39.50). At the time of GILS development, Z39.50 was being routinely implemented by libraries and online information services. GILS, however, was a major new non-library application for Z39.50. In addition, the GILS Profile was one of only two early profiles for use of Z39.50 in a specific application. GILS can be viewed as an early implementor of Z39.50 for non-library applications to achieve interoperability between different computer systems. Ambur discusses a number of issues regarding Z39.50 and interoperability of GILS still to be addressed (1996).

The 1994 report (Moen & McClure, 1994, pp. 16–24) also discussed a number of key policy issues affecting GILS development such as:

- OMB's roles and responsibilities
- GILS and IRM roles and responsibilities
- GILS and record managers' responsibilities
- Technical standards.

To a large degree, these policy issues still affect the overall success of the GILS initiative.

Ultimately, the efforts beginning with the Commission on Federal Paperwork (1977), and a range of intervening events, studies, and policy initiatives related to GILS, resulted in the December 1994 OMB Bulletin 95–01, "Establishment of a Government Information Locator Service" (Office of Management and Budget, 1994). The Federal government had now formally mandated a policy on the establishment and operation of GILS. OMB

Bulletin 95–01 is the key policy instrument that currently guides U.S. Federal GILS development and is reprinted as Appendix A–1. In addition, the *Paperwork Reduction Act of 1995* (P.L. 104–13, Sec. 3511) reinforced the executive initiative for GILS through legislative mandate with a section in the Act on the establishment of GILS (see Appendix A–2).

### 2.1.3. Policy Guidance and Directive in OMB 95–01

*FIPS Pub. 192* and *The Government Information Locator Service: Guidelines for the Preparation of GILS Core Entries* (National Archives and Records Administration, 1995) addressed policy and technical issues related to GILS interoperability and content of GILS records (see Appendix A–3 for NARA Bulletin 95–03). OMB Bulletin 95–01, however, is central and warrants a detailed examination. Simply stated, OMB Bulletin 95–01 directed agencies to implement “agency GILS” that would together comprise the U.S. Federal GILS and result in a government-wide information locator. The Bulletin referenced the *National Information Infrastructure: Agenda for Action* (Information Infrastructure Task Force, 1993) as providing the vision for GILS; *Agenda for Action* called for the establishment of a “virtual card catalogue” [sic] of government information holdings. The Bulletin referenced OMB Circular A–130 for authority in establishing GILS.

The Bulletin’s transmittal memo signed by the Director of OMB described the three basic goals for the effort. GILS would:

- Identify public information resources throughout the Federal government
- Describe information available in those resources, and provide assistance in obtaining the information
- Serve as a tool to improve agency electronic records management practices.

The Bulletin articulated agency responsibilities related to GILS, the functions of GILS, and specific requirements for GILS implementation including:

- Identify information resources throughout the Executive Branch
- Describe the information available
- Provide assistance in how to obtain the information
- Improve agencies’ abilities to carry out their records management responsibilities and to respond to Freedom of Information Act requests
- Serve to reduce the information collection burden on the public by making existing information more readily available for sharing among agencies.

The Bulletin reflected a vision of GILS as supporting a number of functions (e.g., public access and records management). The applicability of the Bulletin, however, was limited to all departments and agencies in the Executive Branch; independent regulatory commissions and agencies were requested to comply with the Bulletin’s mandate. OMB’s jurisdiction is limited to these areas of the Federal government, but if GILS does not address Congressional and Judicial information, one can question whether GILS is truly a *government information* locator.

The Bulletin provided definitions of several key GILS concepts including:

- **GILS Core:** “a subset of all GILS locator records which describe information resources maintained by Federal agencies, comply with the GILS core elements defined in Federal Information Processing Standards Publication (FIPS Pub.) 192, and are mutually accessible through interconnected electronic network facilities”
- **Information dissemination product:** “any book, paper, map, machine-readable material, audiovisual production, or other documentary material, regardless of physical form or characteristic, disseminated by an agency to the public” (definition from OMB Circular A–130)
- **Locator:** “an information resource that identifies other information resources, describes the information available in

those resources, and provides assistance in how to obtain the information.”

OMB Bulletin 95–01 referenced OMB Circular A–130 not only for the definition of an information dissemination product but also because Circular A–130 directed agencies to maintain inventories of their information resources. The Bulletin stated that such inventories or other finding aids to the resources should be represented in the GILS Core to serve public access and records management goals of GILS. The Bulletin goes on to state, “GILS will become an integral part of the Federal government’s overall information management and dissemination infrastructure, and will ultimately facilitate both identification and direct retrieval of government information.” Acknowledging the desirability of direct access/retrieval to the information resources described in GILS, the Bulletin expected agencies to do that “to the extent practicable.”

OMB Bulletin 95–01 identified a series of GILS implementation activities to be accomplished within specified deadlines (quoted directly from the Bulletin):

- (1) By December 31, 1995, compile an inventory of its 1) automated information systems, 2) Privacy Act systems of records, and 3) locators that together cover all of its information dissemination products. Each such automated information system, Privacy Act system of records, and locator of information dissemination products shall be described by a GILS Core locator record that includes the mandatory GILS Core Elements, and appropriate optional GILS Core Elements as defined in FIPS Pub. 192 and 36 CFR 1228.22(b). Agencies should also supplement the GILS Core Elements with other data elements suitable for specific agency records management and information dissemination needs and objectives. Similar information dissemination products and automated information systems may be identified by a single GILS Core locator record, provided that the locator record clearly identifies the

number and scope of items aggregated. Privacy Act systems of records should, however, be identified individually.

- (2) By December 31, 1995, make its initial GILS Core locator records available on–line in a form compliant with FIPS Pub. 192 and the related application profile.
- (3) By June 30, 1996, review the information resources identified in the agency inventory of automated information systems and GILS Core locator records for completeness and to determine the extent to which they include Federal records as defined at 44 *U.S.C.* 3301. For all Federal records covered by the inventory, the agency shall determine whether they are covered by a records disposition schedule authorized by the Archivist of the United States.
- (4) By December 31, 1996, submit to the Archivist a request for disposition authority proposing schedules for unscheduled records in the information resources described in the GILS Core locator records. The agency should also advise the Archivist if it believes any information resource described in the GILS Core locator records has sufficient historical or other value to warrant continued preservation after the information is no longer needed in the agency.

The inventories of agency automated information systems and information dissemination products that are reflected in the GILS Core should serve as the foundation for developing the records schedules proposed by the agency. When an agency needs to retain different categories of records covered by a GILS Core locator record for different periods of time, the agency should supplement the GILS Core locator record by describing each category. Agencies should cite the applicable disposition authority in the GILS Core element for "supplemental

information" for entries that cover records that have been scheduled.

When information dissemination products are part of an on-going series, the agency may submit a proposed records schedule which applies to the entire series. The schedule entry describing such a series may refer to GILS Core locator records to supplement the series description included in the request.

- (5) Continually update its inventory and GILS Core locator records as new information dissemination products and automated information systems are identified.

The Bulletin prescribed these activities and identified deadlines for their accomplishment but was silent on any requirements for agencies to report on their GILS implementations or if they had indeed accomplished the objectives of the directive.

Agencies named by the Bulletin to have special responsibilities for the U.S. Federal GILS initiative included the Department of Commerce (e.g., maintain *FIPS Pub. 192*), NARA (e.g., publish guidance on creating and provide training for using GILS records), and the General Services Administration. The Bulletin also identified "interagency committees" as having an important role in coordinating GILS efforts and developing "interagency topical locators."

The Bulletin also created the Government Information Locator Service Board (the GILS Board), consisting of representatives from a number of government agencies. The GILS Board would "evaluate the development of the GILS," and on an annual basis issue a report that "evaluates and recommends enhancements to GILS to meet user information needs, including factors such as accessibility, ease of use, suitability of descriptive language, as well as the accuracy, consistency, timeliness and completeness of coverage."

In summary, OMB Bulletin 95-01 provided initial policy guidance and direction to agencies in developing their "agency GILS." It focused attention on GILS as functioning in two primary

areas: public access and records management. GILS as a public access device would allow users to identify, locate, and acquire/access information resources of Federal agencies. GILS as a records management device would allow agencies to use GILS records to reduce reporting burdens and facilitate record scheduling.

#### 2.1.4. GILS Implementation

The release of OMB Bulletin 95-01 and the publication of *FIPS Pub. 192* in December 1994 provided the policy and technical specifications for the U.S. Federal GILS implementation. Agencies began developing their implementations in 1995 and continued throughout 1996. Articles noted in Section 2.3 below discuss and describe agency implementation activities throughout this period. Chapter 4 of this report details the extent of agency implementations and identifies a range of issues that are now visible because of this two-year experience.

In December 1995, the GILS Board met for the first—and only time—since the publication of OMB Bulletin 95-01. At that meeting, the Board approved a recommendation for an evaluation of GILS.

NARA hosted a GILS Conference in November 1996 that brought together over 200 people, primarily agency staff but also citizens, academics, and technology vendors. By the time of this Conference, many agencies had had first-hand experiences with GILS. Some came to the Conference with pride in their successful implementations. Others came with concerns about implementation issues, with resentment about having to implement GILS, or with an interest and willingness to implement GILS but confused as to the purpose and definition of GILS. The Conference reflected myriad views of GILS and its future (Baisch, 1997).

GILS has encompassed different meanings as it evolved from conception to implementation. For example, Sally Katzen (1996), the Administrator of the Office of Information and Regulatory Affairs in the Office of Management

and Budget (OMB–ORIA), proposed that GILS can go beyond its original purposes to:

- Become the “killer application” for agencies to use in implementing the provisions of the new *Electronic Freedom of Information Act Amendments of 1996* (EFOIA)
- Become a Global Information Locator Service that binds together the information activities of all governmental entities and their partners worldwide.

Throughout the Conference it was clear that GILS is still in its infancy as far as achieving its *intended* functions as a locator service that promotes and enhances public access to government information and as a records inventorying and scheduling tool to fulfill NARA requirements. People questioned whether GILS should or could support additional functions and expectations such as reducing FOIA requests.

Since the appearance of OMB Bulletin 95–01, however, there has been some controversy as to the role, usefulness, and importance of the GILS initiative. Upon the issuance of OMB Bulletin 95–01, Love wrote that “there is ambiguity over how GILS will work. The system is designed to point to public information resources, but it is unclear how far the system will go in allowing citizens to obtain the documents or data directly” (1994, p. 1). More recently, Henderson identified a range of problems and policy issues and concluded that “only the most minimal expectations were reached in regards to GILS” (1997, p. 1). The current evaluation study was intended to assess agency activities during the past two years and the extent to which GILS is achieving the important policy goals outlined in OMB Bulletin 95–01. Thus, an assessment of the current policy environment related to GILS may provide a useful perspective to help judge the overall effectiveness of the GILS initiative.

## 2.2. THE FEDERAL INFORMATION POLICY ENVIRONMENT FOR GILS: A REVIEW

The preceding section briefly outlined the development of the concept of GILS leading to OMB Bulletin 95–01 which directed agencies to begin developing agency–based GILS as elements of a government–wide information locator service. Another perspective for understanding GILS is the broader information policy environment in which GILS is being implemented. The purpose of this policy review is to examine selected components of the Federal information policy environment, as of March 1997, as they relate to GILS. More specifically this review has the objectives to:

- Identify the degree to which selected information policy instruments mention, affect, or refer to the GILS initiatives—either implicitly or explicitly
- Compare these policy instruments as to their ambiguity, overlap, contradictions, or gaps as they relate to GILS
- Discuss key issues that arise from the policy review that may require policy attention for the future development of GILS.

The review concentrates on policy instruments developed since 1990 as previous work is available that analyzes Federal policy related to locator systems prior to 1990 (McClure, et al., 1990).

It is important to stress that the policy review presented here is not comprehensive. The policy instruments and initiatives analyzed, in the opinion of the investigators, are key factors that affect the U.S. Federal GILS efforts. More specifically, the policy initiatives discussed in this section do not include those developed by individual agencies. Other sections of this report discuss selected agency policy for GILS development identified as a result of the agency site visits that the investigators conducted during the study.

A well–established fact among information policy analysts is that rather than a single information policy, U.S. Federal information policy is reflected



in a diversity of laws, regulations, directives, and other statements (Hernon, McClure & Relyea, 1996). So it was not surprising that subsequent to OMB Bulletin 95-01 in December 1994 establishing GILS, policymakers offered a significant amount of information policy legislation and passed it into law. These laws include the *Government Performance and Results Act of 1993* (U.S. Congress, 1993), the *Paperwork Reduction Act of 1995* (U.S. Congress, 1995), the *Electronic Freedom of Information Act of 1996* (U.S. Congress, 1996a), and the *Information Technology Management Reform Act of 1996* (U.S. Congress, 1996b). Each of these laws, as well as other policy statements such as OMB Circular A-130, either explicitly or implicitly address GILS or GILS functions. The policy environment or context for GILS is dynamic and developed significantly since 1990.

### 2.2.1. Overview Of Selected Policies

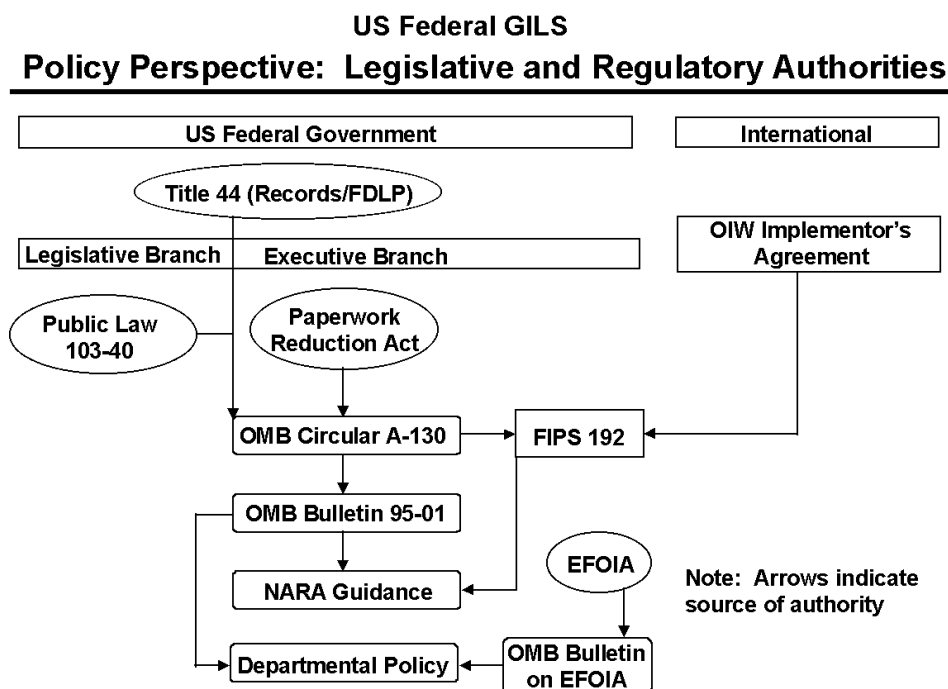
Two areas of policy are of special interest in this review. One area concerns specific policies that provide authority and mandate for the U.S. Federal

GILS initiative. The other area concerns recent legislation and other policy initiatives that can be viewed as intersecting with GILS—either by taking advantage of the existence of agency GILS to support goals of the policy (e.g., EFOIA) or by identifying functions that are GILS-like but do not clearly or explicitly mention GILS.

The discussion above on the historical development of the U.S. Federal GILS initiative identified several efforts since the 1970s that laid a policy and conceptual foundation for GILS. Recent policy statements such as the OMB Bulletin 95-01 came from legislative and regulatory authority. Figure 2-1 presents a policy perspective on U.S. Federal GILS that reflects the linkage and relationships among various policies. (Figure 2-1 is adapted from a graphic developed by the GILS Special Interest Group [GILS SIG] to identify the legislative and regulatory authorities specific to GILS.)

Several specific GILS authorities represented in Figure 2-1 are:

**Figure 2-1**  
**Policy Perspective on GILS**



- “Establishment of a Government Information Locator Service” (OMB Bulletin 95–01)
- “Management of Federal Information Resources” (OMB Circular A–130)
- *Paperwork Reduction Act of 1995* (P.L. 104–113).

Also associated with these authorities and derived from them are *FIPS Pub. 192* that provided the technical specifications for GILS implementations and NARA’s *The Government Information Locator Service: Guidelines for the Preparation of GILS Core Entries*.

Other recent legislation, executive orders, and guidelines can be viewed as intersecting with the U.S. GILS initiative:

- *Government Printing Office Electronic Information Access Enhancement Act of 1993* (Pub. L. 103–40)
- *Electronic Freedom of Information Amendments of 1996* (P.L. 104–231)
- *Information Technology Management Reform Act of 1996* (P.L. 104–106)
- *Government Performance and Results Act of 1993* (P.L. 103–62)
- *Federal Information Technology* (Executive Order 13011, 1996)
- *Guidelines for Agency Use of the World Wide Web* (Office of Management and Budget, 1996a).

Some of these items may not explicitly identify GILS, but they contain important policy implications for GILS. Figure 2–2 provides a side by side analysis summarizing key aspects of the selected information policies identified above.

## 2.2.2. Policies Providing Authority for GILS

This section briefly summarizes the policy instruments identified in Figure 2–1 that provide authority for GILS.

### OMB Bulletin 95–01

OMB Bulletin 95–01 (see Appendix A-1) derives from the authority of Circular A–130, which set forth general policy on information locators in Circular A–130. As discussed in Section 2.1.3., OMB Bulletin 95–01 provided policy goals and direction to agencies regarding U.S. Federal GILS including:

- Scheduling and disposition of records through NARA
- Electronic records management
- Improved agency responses to the Freedom of Information Act (FOIA) requests
- Potential reduction of information collection burden on the public.

The Bulletin states that agencies will be responsible for inventorying and describing holdings and a GILS Board will be established to evaluate the development and operation of GILS and recommend improvements to meet user needs.

### OMB Circular A–130

OMB Circular No. A–130 derives from the authority of the *Paperwork Reduction Act* and is the Executive branch implementation of the information policy functions of the Act. While there are no direct references to GILS, Circular A–130 states that agencies are to help the public locate government information by developing retrieval mechanisms for public use (8a(5)(d)(iv)) and establish and maintain inventories of all agency information dissemination products (8a(6)(c)). However, suggestions for these aids are inventories in the form of catalogs and directories, with no specific mention of electronic locators (8a(6)(d)). In its analysis of this policy, Circular A–130 also has some examples of what a locator record might include, such as content, format, means of access, etc. (Appendix IV, analysis of 8a(5)(d)(iv)).

**Figure 2–2**  
**Summary of Selected Policy Instruments Related to GILS**

<b>Policy</b>	<i>Management of Federal Information Resources</i> <i>OMB Circular A–130 (44 USC 3501 et.seq.)</i>	<i>Establishment of a Government Information Locator Service</i> <i>OMB Bulletin 95–01</i>
<b>Timeline</b>	7/24/94	12/7/94
<b>Direct Reference</b>	No direct language regarding GILS	“GILS will identify information resources throughout the Executive Branch, describe the information available, and provide assistance in how to obtain the information. It will improve agencies' abilities to carry out their records management responsibilities and to respond to Freedom of Information Act requests. It will also serve to reduce the information collection burden on the public by making existing information more readily available for sharing among agencies.”
<b>Indirect Reference</b>	<p>“Help the public locate government information maintained by or for the agency” (8a(5)(iv))</p> <p>In Section 8a (6) an information dissemination management system shall at a minimum, “Establish and maintain inventories of all agency information dissemination products”</p> <p>“Develop such other aids to locating agency information dissemination products including catalogs and directories...” (8a(d))</p>	
<b>Responsibility</b>	All Federal agencies	<p>All Federal agencies</p> <p>NARA Archivist – develop GILS core locator elements</p> <p>Secretary of Commerce – designates first Board chair, develops FIPS standard</p> <p>GSA Administrator–make software available to agencies</p>
<b>Oversight</b>	Director of OMB	Government Information Locator Service Board which includes representatives of the OMB Director, the Secretary of Commerce, the Secretary of the Interior, the Archivist of the United States, and the Administrator of General Services. The Public Printer and the Librarian of Congress will be invited to participate as appropriate.
<b>Enforcement</b>	Not really specified, but Director of OMB can grant waivers to agencies	Not specified

**Figure 2–2 (cont.)**  
**Summary of Selected Policy Instruments Related to GILS**

<b>Policy</b>	<i>Paperwork Reduction Act of 1995</i> <i>P.L. 104–113 (Amends 44 USC 35)</i>	<i>Government Printing Office Electronic Information Access Enhancement Act of 1993</i> <i>(Pub. L. 103–40)</i> <i>(Title 44, Sec. 4101 et seq.)</i>
<b>Timeline</b>	5/22/95	6/8/93
<b>Direct Reference</b>	Section 3511. Establishment and operation of Government Information Locator Service  “(a)(1) cause to be established and maintained a distributed agency–based electronic Government Information Locator Service...”	No direct language regarding GILS
<b>Indirect Reference</b>		Chapter 41–Access to Federal Electronic Information, Section 4101(a) states that the Superintendent of Documents shall: “(1) maintain an electronic directory of Federal electronic information; (2) provide a system of online access to the Congressional Record, the Federal Register, and, as determined by the Superintendent of Documents, other appropriate publications distributed by the Superintendent of Documents; and (3) operate an electronic storage facility for Federal electronic information to which online access is made available under paragraph (2).”
<b>Responsibility</b>	Section 3511: “(a)(2) require each agency to establish and maintain an agency information locator service as a component of, and to support the establishment and operation of the Service”	All Federal agencies
<b>Oversight</b>	Director of OMB/Administrator of OIRA Interagency Committee – advises Secretary of Commerce on technical standards; will include Archivist of the United States, Administrator of General Services, Public Printer, and the Librarian of Congress	NARA Archivist
<b>Enforcement</b>	Not specified	Not specified

**Figure 2–2 (cont.)**  
**Summary of Selected Policy Instruments Related to GILS**

<b>Policy</b>	<b><i>Privacy Act of 1974</i></b>	<b><i>Government Performance Results Act of 1993 P.L. 103–62</i></b>
<b>Timeline</b>	1974	1/5/93
<b>Direct Reference</b>	No direct language regarding GILS.	No direct language regarding GILS.
<b>Indirect Reference</b>	<p>Section 552a(e) states that, “each agency that maintains a system of records shall:”</p> <p>(4) publish in the <i>Federal Register</i> upon establishment or revision a notice of the existence and character of the system of records, which notice shall include –</p> <p>(A) the name and location of the system;</p> <p>(B) the categories of individuals on whom records are maintained in the system;</p> <p>(C) the categories of records maintained in the system;</p> <p>(D) each routine use of the records contained in the system, including the categories of users and the purpose of such use;</p> <p>(E) the policies and practices of the agency regarding storage, retrievability, access controls, retention, and disposal of the records;</p> <p>(F) the title and business address of the agency official who is responsible for the system of records;</p> <p>(G) the agency procedures whereby an individual can be notified at his request if the system of records contains a record pertaining to him;</p> <p>(H) the agency procedures whereby an individual can be notified at his request how he can gain access to any record pertaining to him contained in the system of records, and how he can contest its content; and</p> <p>(I) the categories of sources of records in the system.</p>	<p>No indirect references to information locator systems, but since GILS is a government program, the Act does apply.</p> <p>Section 2(b) states that the Act’s purposes are:</p> <p>“(3) improve Federal program effectiveness and public accountability by promoting a new focus on results, service quality, and customer satisfaction;”</p> <p>“(4) help Federal managers improve service delivery, by requiring that they plan for meeting program objectives and by providing them with information about program results and service quality;”</p> <p>“(6) improve internal management of the Federal Government.”</p>
<b>Responsibility</b>	All Federal agencies	All Federal agencies
<b>Oversight</b>	Congressional committees, Director of OMB	Director of OMB
<b>Enforcement</b>	Director of OMB, though not clearly specified	Congressional budget decisions

**Figure 2–2 (cont.)**  
**Summary of Selected Policy Instruments Related to GILS**

<b>Policy</b>	<b><i>Information Technology Management Reform Act of 1996</i> <i>P.L. 104–106</i></b>	<b><i>Federal Information Technology E.O. 13011</i></b>
<b>Timeline</b>	2/10/96	7/16/96
<b>Direct Reference</b>	No direct language regarding GILS	No direct language regarding GILS
<b>Indirect Reference</b>	<p>Section 5111 (b) highlights the use of information technology  “...to improve the productivity, efficiency, and effectiveness of Federal programs, including through the dissemination of public information and the reduction of information collection burdens on the public.”</p> <p>Section 5403 states: "Notwithstanding any other provision of this division, if in designing an information technology system pursuant to this division, the head of an executive agency determines that a purpose of the system is to disseminate information to the public, then the head of such executive agency shall reasonably ensure that an index of information disseminated by such system is included in the directory created pursuant to section 4101 of title 44, United States Code." [Refers to Government Printing Office's electronic directory of Federal electronic information.]</p>	<p>No indirect references to information locators.</p> <p>However Section 4(a)(1) states:</p> <p>“creating opportunities for cross–agency cooperation and intergovernmental approaches in using information resources to support common operational areas and to develop and provide shared governmentwide infrastructure services”</p>
<b>Responsibility</b>	Director of OMB/Agency Heads/Chief Information Officers	Agency Heads/Agency Chief Information Officers
<b>Oversight</b>	Director of OMB Secretary of Commerce – Standards and guidelines for computer systems	“seek the views of the Chief Financial Officers Council, Government Information Technology Services Board, Information Technology Resources Board, Federal Procurement Council, industry, academia, and State and local governments on matters of concern to the Council as appropriate.” (Section 3(a)(6))
<b>Enforcement</b>	Director of OMB – budget and appropriations	Office of Management and Budget

**Figure 2–2 (cont.)**  
**Summary of Selected Policy Instruments Related to GILS**

<b>Policy</b>	<i>Electronic Freedom of Information Amendments of 1996</i> <i>P.L. 104–231 (Amends 5 USC 552)</i>	<i>OMB Draft Guidelines for Agency Use of the World–Wide Web for Electronic Information Collection, Access and Dissemination, and Management</i>
<b>Timeline</b>	10/2/96	7/16/96
<b>Direct Reference</b>	No direct language regarding GILS.	<p>“Websites shall also include locating aids to any other electronic dissemination and access programs operated by or for the agency. Such programs may include dial–up electronic bulletin boards and third party (intermediary) access services.</p> <p>Full compliance with Government Information Locator Service (GILS) standards will satisfy these locator requirements.”</p>
<b>Indirect Reference</b>	<p>“Section 2 (a)(6) Government agencies should use new technology to enhance public access to agency records and information.”</p> <p>“Section 2(b)(1) ...ensuring public access to agency records and information”</p> <p>“Section 2(b)(2) improve public access to agency resources and information”</p> <p>“Section 4 (2) a general index of such records [records that have been released to individuals and are likely to have subsequent requests], which shall be made available electronically by December 31, 1999...”</p> <p>Section 11 Directs each agency head to make publicly available upon request, reference material or a guide for requesting records or information from the agency, including: “(1) an index of all major information systems of the agency; (2) a description of major information and record locator systems maintained by the agency; and (3) a handbook for obtaining various types and categories of public information from the agency.”</p>	
<b>Responsibility</b>	Agency Heads	All Federal agencies
<b>Oversight</b>	Attorney General – Department of Justice	Internal – Agency established oversight body Suggested members include Chief Information Officer, Public and Congressional Affairs Officers, Records Officer/Manager, Privacy Act Officer, Freedom of Information Act Officer, Security Officer, and appropriate program offices.
<b>Enforcement</b>	U.S. District Court	Existing laws – FOIA, Privacy Act

### Paperwork Reduction Act of 1995

In the *Paperwork Reduction Act of 1995* (PRA), Congress wrote into law the establishment and operation of the Government Information Locator Service (P.L. 104–13, Sec. 3511). More importantly, the law clarified that GILS would identify major information systems, holdings, and dissemination products and act as a tool for providing timely, equitable, and useful dissemination of government information to the public. OMB Bulletin 95–01 discussed “information dissemination products,” and the GILS records prescribed by the Bulletin were to describe “locators that together cover all of its information dissemination products.” The PRA language could be interpreted as prescribing GILS records that would identify specific dissemination products, not simply existing locators of those products. The 1995 PRA also emphasized providing information in a variety of formats, including electronic, and for agencies to make use of available technology.

The PRA also charged the Director of OMB, “in cooperation with the Archivist of the United States, the Administrator of General Services, the Public Printer, and the Librarian of Congress, [to] establish an interagency committee to advise the Secretary of Commerce on the development of technical standards for the Service to ensure compatibility, promote information sharing, and uniform access by the public.” OMB 95–01 established the GILS Board with membership to include “representatives of the Director, Office of Management and Budget, the Secretary of Commerce, the Secretary of the Interior, the Archivist of the United States, and the Administrator of General Services” and the Public Printer and the Librarian of Congress were to be “invited to participate as appropriate.” Since there is overlapping membership prescribed for these two groups, the investigators queried the study’s COTR about the status of the group prescribed by PRA. He responded that the GILS Board “is basically it” (Weiss, 1997). The effectiveness of these two advisory boards—or even if they refer to separate bodies—and the degree to which they have accomplished their stated responsibilities is beyond the scope of the current study.

The evaluation of agency performance, in terms of the requirements of the PRA, is not very detailed or specific, since the agencies only have to present a written report of “steps” taken to improve performance (Sec. 3513, (b)(1)(2)). The further evaluation of performance, that falls on the Director of OMB when reporting to Congress, focuses on describing how collection burdens have been reduced or increased (Sec. 3514, (a)(2)(A)).

### National Archives and Records Administration Policies

OMB Bulletin 95–01 directed the NARA to publish guidance and provide training for GILS development. NARA responded with the publication of *The Government Information Locator Service: Guidelines for the Preparation of GILS Core Entries* (National Archives and Records Administration, 1995a), which also outlines how agencies can use GILS to meet their records management responsibilities.

NARA also is committed to the use of GILS for records management. NARA’s Strategic Plan for 1997–2007 (National Archives and Records Administration, 1996, p. 11), which addresses how to promote records management, includes the following reference to GILS:

We will emphasize the need for achieving intellectual control, and for scheduling records, by including in our life-cycle management system a means to inventory and schedule records. We will urge federal agencies to use the system so that together we can identify all federal records created by agencies, review their contents, and assure ourselves of not losing essential evidence. We will exploit the Government Information Locator Service to the extent possible for this purpose.

The degree to which this NARA stance, however, has affected policy, and thus, agency records management activities for improved records management is unclear.



### 2.2.3. Policies with Intersection and Impact on GILS

An aspect of the Federal context in which agencies initiated and pursued GILS implementation is the complexity and depth of information policy issues facing policymakers in the past several years (see also Chapter 4, Section 4.1.) A number of the policies reference locator-like activities (e.g., *Government Printing Office Electronic Information Access Enhancement Act of 1993*), others direct the development of locators (e.g., *Electronic Freedom of Information Act Amendments of 1996*), and still others have little to do with GILS as a locator but intersect at the levels of information technology policy and program accomplishment (e.g., *Information Technology Management Reform Act of 1996* and *Government Performance and Results Act of 1993*). This section summarizes the policy instruments in Figure 2–2 that indirectly impact or intersect with GILS.

#### Information Technology Management Reform Act of 1996

The *Information Technology Management Reform Act of 1996* (ITMRA) (P.L. 104–106) has the purpose to use information technology (IT) to improve Federal programs. Improvement of programs includes meeting public needs for information and reducing collection burdens (Sec. 5112 (b)). Although ITMRA focuses on acquisitions and information management, it does have bearing on the establishment of GILS. Section 5403 of ITMRA ties information technology systems that disseminate public information to the Government Printing Office (GPO) by requiring that agencies provide information on their systems to the GPO’s electronic directory—but “GILS,” *per se*, is not mentioned.

ITMRA emphasizes a fuller integration of IT, “...to promote a coordinated, interoperable, secure, and shared Government-wide infrastructure...” (Section 1 (d)). This is a key aspect to development and functionality of GILS.

As a caveat, a component of this Act is to develop and implement IT standards. Moen and McClure

(1994b) point out that information technology standards should be considered in tandem with information content standards and user needs. They also emphasize that GILS is an example of a standards-based approach to IT development and how, in turn, IT standards support broader information policies (see also Moen, 1994).

ITMRA builds on corporate models by designating a Chief Information Officer (CIO) in all Cabinet and major independent agencies, with primary responsibility for IT management and carrying out PRA functions. CIOs are responsible for monitoring IT performance, including making sure personnel have necessary skills and knowledge to fulfill information resources management duties. ITMRA does not provide any concrete guidance as to how to measure performance, and GILS is not directly mentioned as a tool for improving overall management of information resources or evaluating information resources management practices.

Clearly, GILS can be considered as a tool CIOs may use to carry out their duties. One example of how GILS could be used as a measure of performance is to assess the number of times GILS is used, and for what purposes, via transaction log analyses. (See Appendices C–7 and E–4 for description and results of Web server transaction analysis carried out in this study). This kind of assessment can also be applied to agency fulfillment of the *Government Performance and Results Act of 1993* (GPRA) (P. L. 103–62) requirements for other Federal programs. Yet, ITMRA is conspicuously silent about GILS.

#### Government Performance and Results Act of 1993

GPRA instituted a requirement for the development of performance measures throughout Executive branch agencies. GPRA seeks to change how agencies assess their programs and services by placing much greater emphasis on what the programs and services are accomplishing, and how well the accomplishments match the programs’ purpose and objectives. The advent of GPRA raises the question of whether GILS can and should be viewed within the context of performance measurement. Can Web usage statistics for an

agency's GILS be adapted and considered as measures of agency program performance? It would seem, for example, that the number of "hits," types of hits, sequence of uses, etc. on an agency's GILS would bear some relationship to performance of the agency's information dissemination program goals.

#### Executive Order 13011, Federal Information Technology

ITMRA was followed by "Federal Information Technology," Executive Order 13011 (1996), that seeks to ameliorate the uncoordinated approach to Federal information resources management by using relevant portions of PRA, ITMRA, and GPRA. The purpose is to improve management and acquisition of information technology in a measurable way, through evaluation of the provision of public service and the degree of agency mission fulfillment. Once again, implications for GILS can be drawn from the Executive Order, but GILS is not explicitly mentioned.

The Executive Order establishes an interagency support structure to, among other things, "minimize unnecessary duplication of effort..." (Section 1 (e)). The inventory capacity of GILS can play a key role as agencies' use of GILS could help them pinpoint similar programs and reduce duplication across information systems.

The establishment of the CIO Council formalizes an interagency support structure. The Council will provide a forum to improve a range of information management practices, including the design, modernization, use, sharing, and performance of information resources. It will also develop recommendations and serve in an advisory capacity to OMB.

#### Government Printing Office Electronic Information Access Enhancement Act of 1993

*The Government Printing Office Electronic Information Access Enhancement Act of 1993* (P. L. 103-40) addressed issues of access to Federal electronic information. Specifically related to

GILS are two provisions of the Act that charge the Superintendent of Documents to:

- Maintain an electronic directory of Federal electronic information
- Operate an electronic storage facility for Federal electronic information to which online access is made available.

This Act became law prior to the establishment of GILS, but clearly agency GILS can serve as a basis for the electronic directory. In fact, with a GILS that meets the goals of OMB 95-01 and PRA, GILS could serve as such a listing of Federal electronic information.

#### Electronic Freedom of Information Amendments of 1996

The most recent legislation related to GILS is the *Electronic Freedom of Information Act Amendments of 1996* (EFOIA) (P.L. 104-231). This legislation calls for creation and availability of an index of all major information systems of an agency and a "description of major information and record locator systems" maintained by the agency (Section 11). The Act does not refer to GILS, yet what it calls for parallels the intent of GILS. However, it does not create one central point of access/contact for this information, thereby requiring the public to contact individual agencies.

On April 7, 1997 the Director of OMB issued a memorandum providing guidance to address Section 11 of the Act (Office of Management and Budget, 1997a). The memorandum states that agencies can satisfy the requirements listed above for the index and description by establishing a GILS "presence." The lack of precision in the memorandum's language only confuses how GILS and EFOIA can work together, and how, specifically, GILS can assist in handling EFOIA requests.

### Privacy Act of 1974

Another policy area to note, that is usually intertwined with FOIA policy, is the *Privacy Act of 1974*. Section 552a(e) states that, “each agency that maintains a system of records shall:”

- (4) publish in the *Federal Register* upon establishment or revision a notice of the existence and character of the system of records

The notice is to contain descriptive information about the system of records. The Privacy Act requirements reinforce the role for GILS outlined in OMB Bulletin 95–01 since GILS is intended to increase citizen access to Privacy Act Notices. The current arrangement whereby GPO has mounted a compilation of Privacy Act Notices per the memorandum of agreement between OMB and NARA (see Appendix A–4) to satisfy GILS requirements may need to be specifically addressed by policy guidance in a revised OMB 95–01.

### Guidelines for Agency Use of the World Wide Web

OMB has been concerned about the development, management, and operation of Federal agency Web sites and the degree to which they meet existing information policy guidelines. A draft policy statement, *Draft Guidelines for Agency Use of the World–Wide Web for Electronic Information Collection, Access and Dissemination, and Management* (Office of Management and Budget, 1996a) also contained language regarding the role of GILS in agency Web sites. More recently, a draft memorandum from the Administrator of the OMB–OIRA addresses “principles” for Federal agency use of the Web (Office of Management and Budget, 1997b). Formal policy guidance from OMB on this topic remains to be issued. Agency guidelines have been developed by the World Wide Web Federal Web Consortium  
<<http://www.dtic.mil/staff/cthomp/guidelines/>>.

Under “Section V: Additional Points” of the Federal Web Consortium guidelines, the following appears (World Wide Web Federal Consortium, 1996):

GILS is an information processing standard and comprehensive indexing scheme that will identify, describe and help find electronic and non–electronic Federal government information resources. Not only will it point the user to the source of the information; as it evolves, GILS will also provide linkages to assist in its delivery. GILS supplements other agency information dissemination mechanisms and commercial information sources. GILS uses network technology and international standards for information search and retrieval so that information can be retrieved in a variety of ways, and so that GILS users can find other information resources worldwide. Agencies should ensure that a GILS record is created for each agency WWW site. Agencies also should assure that all GILS records which identify WWW–retrievable information dissemination products include linkage to that product. See the DefenseLINK GILS for the DoD implementation at  
<<http://www.dtic.mil/defenselink/locator/moreinfo.html>>.

While such guidelines have no formal authority, one sees the beginning of articulated policy linkage between GILS and the development of agency Web sites.

#### **2.2.4. Summary**

This section, as well as the summary offered in Figure 2–2, suggests that there are a number of explicit references to GILS in various policy instruments. There also are a number of *implicit* references to “access to government information,” “management of information technology and information resources,” and “improving the effectiveness of government operations” in some policy instruments that *could* be inferred to relate to the GILS initiative. The overriding policy goal of enhancing public access to government information is relatively clear throughout many of these laws, executive orders, regulations, etc. It is also clear that these policy instruments attempt some form of intersection of the management of Federal information resources, agency performance, and enhanced access. The resulting policy context of

these instruments, however, is ambiguous since there are instruments that discuss GILS-like functions without referencing GILS, or in the case of PRA and the OMB Bulletin, they can be interpreted as differing in their prescriptions for which resources GILS records should be created.

The 1996 GILS Conference identified a number of issues, many of which clearly have policy implications, that need to be addressed for the

future development of GILS. Figure 2–3 lists a set of issues presented by the investigators at that conference which were largely accepted by the audience as a summary of the key issues affecting the future development of GILS.

The study's data collection activities explored these issues as well as identified other topics and issues. The findings in Chapter 4 describe many of these issues in more detail.

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**Figure 2–3**  
**Selected Key Issues for GILS Development**

- ◆ Agency culture and its attitude toward public access to government information
  - ◆ Granularity of the GILS record
  - ◆ Making linkages between GILS records and documents records
  - ◆ Focus on public access versus records management
  - ◆ Content of the GILS record—more, less, different?
  - ◆ Need for the automatic generation of GILS records
  - ◆ Linking GILS records across government and across servers
  - ◆ Policy for better enforcement and oversight of agency GILS activities
  - ◆ Clarification between Web Homepage goals and GILS goals—Integration of the two
  - ◆ Obtaining user feedback and evaluation of GILS efforts
  - ◆ Increasing market demand for GILS efforts
  - ◆ Is the current GILS the right product? To what degree should original goals of GILS be revised?
  - ◆ Improving buy-in to GILS efforts across the agency and among different agency positions
  - ◆ Ensuring top-level support (moral and physical resources) to support GILS efforts
  - ◆ Promoting cross-agency interoperability and standards for GILS development
- 

GILS may have the potential to serve multiple information resource management purposes, but is befuddled in some key areas. This is due, in part, to the increased role and importance of information access and the technology to facilitate that process. The fast changing IT environment has increased the difficulty policymakers face in coordinating new information policies with existing ones. An unfortunate side effect of this lack of coordination is a certain degree of confusion that has slowed the agency implementations of GILS. In spite of this, the purpose and open systems structure of GILS is serving as a model for similar services developed by state governments and other countries. While these aspects of GILS are sound, its full realization at the Federal level may require further policy refinement.

### **2.3. SELECTIVE REVIEW OF THE LITERATURE**

Discussions, descriptions, and editorials concerning GILS appear in both the professional and popular literature. The majority of the writings, however, have been descriptive rather than evaluative in nature. This selective review of the literature on GILS focuses on articles and documents about the U.S. Federal GILS effort. A review of the literature on GILS provides an opportunity to identify themes, interpretations, and expectations of GILS. Federal information policy is not covered here since the previous section provided a review of the key policy statements, regulations, and laws related to GILS. The review organizes the literature into three time periods: prior to the release of OMB Bulletin 95–

01, the active implementation phase covered by the Bulletin, and post–December 1996.

### **2.3.1. Literature on Government Information Locators Prior to OMB Bulletin 95–01**

Prior to the publication of OMB Bulletin 95–01 in 1994, articles focused on the need to improve public access through the mechanism of a government–wide information locator. Writers pointed to the problems with existing locators. For example, Bass and Plocher (1991) discussed the aborted attempt of the Federal Information Locator Service (FILS).

Reports from a series of research studies conducted by the investigators at Syracuse University since the early 1990s examined the potential for a government–wide information locator. These research projects produced technical reports (McClure, et al., 1990; McClure, Ryan & Moen, 1992) as well as articles for publication in scholarly and professional journals (McClure, et al., 1991; McClure, Moen & Ryan, 1992). The reports provided thorough background on policy and technical considerations for the development of a government–wide locator. An early design for an agency–based, network–accessible information locator can be found in McClure, Ryan, & Moen (1992).

Christian (1994) offered the first overview in the professional, popular, or scholarly literature of the U.S. Federal GILS concept. Christian situated GILS within a policy context of the 1993 revision of OMB Circular A–130, “Management of Federal Information Resources” and the emerging National Information Infrastructure (NII) efforts of the Clinton Administration. Revisions to OMB Circular A–130 strengthened Federal policy regarding agency responsibilities for information dissemination and encouraged the active management of information by agencies. Christian emphasized the value of public access to government information as indicated by his choice of title, “Helping the Public Find Information: The U.S. Government Information Locator Service.” In 1993–94, Christian worked with OMB to refine the concept of GILS, which was documented in a report to the Information Infrastructure Task Force, *The*

*Government Information Locator Service (GILS): Report to the Information Infrastructure Task Force* (Information Infrastructure Task Force, 1994). (The text of the report is also included in Christian 1996b.)

Sprehe (1994) also positioned GILS within the Clinton Administration’s Federal information policy efforts and includes a discussion of the *Freedom of Information Act*, the *Privacy Act*, and the *Paperwork Reduction Act*. Sprehe noted that since the 1980s many agencies had been actively discouraged from a commitment to exploiting their information resources for public benefit. He identified agency public affairs offices as the most likely internal agency consumers for GILS. Sprehe questioned, however, whether a locator system would have enough intrinsic value to producing agencies to cause them to initiate these activities on their own motivation. Sprehe concluded that an imposed requirement (i.e., a GILS mandate) would likely be dropped as soon as external pressure diminished.

Olsen (1994) referenced “GILS as a predecessor to the NII’s vision of having desktop ‘agents’ interact with documents in cyberspace.” Olsen quoted Christian (noted above as a principal architect of GILS) as indicating that the tough part of GILS for agencies will be how they decide to represent their information holdings. Olsen’s article described a few early agency efforts at information locator services.

In a general overview of Clinton Administration initiatives to make government information more accessible, Thyfault (1994) included GILS as one mechanism among many under consideration at the time. These early plans called for GILS to be available free from kiosks, toll–free phone numbers, electronic bulletin boards, fax, and other off–line media such as floppy disks, CD–ROM, or printed guides.

Overall, the literature reviewed prior to OMB Bulletin 95–01 that addressed the concept of a government–wide information locator service focused heavily on the public access aspect of such a locator service.

### 2.3.2. Articles Published after the Issuance of OMB Bulletin 95-01

With the release of OMB Bulletin 95-01, writers on GILS could point to actual policy mandate and agency requirements for implementing GILS. OMB Bulletin 95-01 identified specific milestones and deadlines during the period of 1995-1996 for agencies to begin implementing GILS. The National Institute for Standards and Technology (NIST) published *FIPS Pub. 192* in December 1994 which provided the technical specifications to guide agency implementations. Many of the articles in this period provided general background about GILS, described agency implementations activities, or identified how it could be used to improve access to government information. One exception to the descriptive character of most of the writing was a critical review of U.S. Federal GILS implementations by Henderson and McDermott (1995).

Moen (1995) emphasized the value of GILS for the growing geographic information systems (GIS) community. GILS records can describe spatial data, an important set of information resources collected and held by Federal agencies. This article addressed the potential of GILS to provide a means for agencies to manage geospatially referenced information and to assist users in locating spatial data resources held by individual agencies.

One of the more detailed information policy studies published included a reference to GILS within a larger context of public policy and the national information infrastructure (Kalil, 1995). Kalil addressed information policy issues such as privacy, security, and intellectual property within the new digital information environment. He indicated that a Clinton Administration priority was to increase the dissemination of government information. Kalil included GILS in the context of a broader information policy study and highlighted its potential for improving public access to government information. Plocher (1996) linked GILS to larger IRM issues brought about by the passage of the *Paperwork Reduction Act of 1995*.

Henderson and McDermott (1995) surveyed agency GILS implementation efforts as of mid-1995. Their

review included information about the individual agency implementations. They reflected OMB Watch's early dissatisfaction with the general lack of user involvement in the development and implementation of GILS, the lack of uniform or coordinated policy guidance, and the lack of integration between agency Web applications and agency GILS records.

Houser (1995) highlighted the confusion as to the relationship between GILS and the World Wide Web and included reasons why agency staff who build Web pages should implement GILS. He identified GPO as a rival rather than an ally to other Federal agencies and suggested that if agencies don't put up their own GILS records, these records are likely to be housed at GPO, an outcome that Houser implied was undesirable. Houser concluded that agencies benefit from making their information resources accessible through GILS on the Web to promote public access.

Corbin's "Cyberocracy" (1996) reported on the growing scope and importance of agency information available on the Web, and linked the U.S. Federal GILS initiative to broader information access issues stemming from Federal agency use of the Internet. Her statements describing some GILS sites with their impressive search engines were tempered by acknowledging that other GILS sites offered little more than electronic versions of library catalog cards. By distinguishing between effective new options for public access to government information and mere electronic equivalents of limited paper-based information access, Corbin identified a lack of consistency across agencies GILS implementations. This and other articles reflected two emerging themes in the writings on GILS as agency GILS become operational and used by the public. The first was the inconsistency of what resources agencies described in GILS records, and the second issue relates to the relationship between GILS and agency Web applications.

The *Electronic Public Information Newsletter* published articles about GILS in many of its monthly issues in 1995 and 1996. The news articles covered a range of topics including:

- Report on agency compliance with OMB 95-01 (Agencies are generally complying, 1995)
- URL addresses for various agency GILS sites (Information Briefs, 1996a; Information Briefs, 1996c)
- Announcement of plans to survey and evaluate agency GILS (Information Briefs, 1996d)
- Use of GILS by governments outside the U.S. (Information Briefs, 1996b)
- Highlights of the November 1996 GILS conference (GILS conference, 1996)
- Announcement of GILS as a finalist in the Government category for the NII Award (GILS is a finalist, 1996).
- An editorial opinion questioning the use of Z39.50 as the standard for GILS (Temin, 1996)
- Posting of spatial data by USGS for GILS users (Olsen, 1996)
- Lack of coordination between GILS efforts and Web pages (Sprehe, 1996a)
- DOD's requirement to link agency Web pages with GILS records or incur subsequent disconnection of the Web page from the Internet if not linked to GILS (Constance, 1996)
- Support for interoperability between GILS and X.500 (O'Hara, 1996a, O'Hara, 1996b)
- Call for the use of document management systems as an extension of GILS (Varon, 1996)
- A recognition that GILS was proving to be an elusive goal (Power, 1996).

These articles provided both the governmental community and the general public with ongoing updates about the GILS activities of Federal agencies.

The November 1996 issue of the *Electronic Public Information Newsletter* summarized issues that surfaced at the 1996 GILS Conference (GILS conference, 1996). These issues included the actual GILS use by the public, the utility of GILS as an Internet information organizing tool, the need to involve end users in GILS design, the need for full access to document level information rather than descriptive records about documents, and the confusion as to the exact kind of information that federal agencies wanted to make accessible to the public.

Two trade newspapers, *Federal Computer Week* and *Government Computer Week* included numerous articles about GILS during the implementation phase. These publications, targeted at technically-oriented government employees and policymakers, included information about GILS efforts in progress at the agencies and other issues related to GILS:

- Hosting of agency GILS records on servers at GPO and NTIS (Jackson, 1996)
- Reference to DTIC's GILS as a "de facto standard for other agencies" (Sikorovsky, 1996b)
- Growth in the number of congressional mandates that required Federal agencies to provide public access to specific types of information
- Advances in technology that offered more economical and effective techniques for disseminating electronic information

Power (1996) identified the issues of the reliability of data content in GILS records and the importance of public trust in government information sources. He quoted Christian with respect to the last issue as posing the question as to "the electronic equivalent of a royal seal" and "what clues should there be to indicate quality and accuracy of information." Within the context of the U.S. Federal GILS as a method to improve public access to government information, he highlighted the need to address reliability of data (accuracy) and trust as to the source of data (authenticity).

Two NARA employees provided another historical overview on GILS. Adams and Thibodeau (1996) described GILS as a "hallmark of the National Information Infrastructure" and identified three trends which supported the emergence and development of GILS at this point in time:

- Growth in the number of congressional mandates that required Federal agencies to provide public access to specific types of information
- Advances in technology that offered more economical and effective techniques for disseminating electronic information

- Increasing public recognition of the value of government information.

Adams and Thibodeau positioned GILS within a Federal IRM context, which is characterized by the dual functions of access to and management of information. The access component of GILS enhanced public access to government information resources and the management component strengthened agency management of information resources. Their article also discussed the contributions of NARA in establishing descriptive standards for GILS data elements.

The role of the Government Printing Office (GPO) and its relationship to GILS received attention from a number of authors. GPO's actions in support of GILS can be seen in the context of GPO's vision of its future responsibilities in an increasingly electronic publishing environment. Specific articles which linked GILS and GPO are Aldrich (1996), Downing (1996), Farrell, et al. (1996), Gellman (1996), and Sprehe (1996b).

OMB's Bruce McConnell, "New Wine in Old Wineskins, U.S. Government Information in a Networked World" (1996), viewed GILS as a means of locating information in the new networked world. He stated that "information ecology" rather than "information highway" is a more meaningful metaphor and stressed the importance of information being created and sustained in its own niche, connected and interdependent with other information. He supported a distributed responsibility framework for maintaining information in a networked environment and called for creatively managing the evolution of the information ecology.

As the period of intense agency GILS implementations came to a close with the December 31, 1996 deadline prescribed in OMB Bulletin 95-01, Christian, one of the original champions for GILS, published "GILS: What is it? Where's it going?" (Christian, 1996a). Moving beyond the U.S. Federal implementation of GILS, he now situated GILS within the context of a Global Information Infrastructure and highlighted GILS as a means to support decentralized interoperability in

an increasing digital information environment characterized by diversity of sources. Christian presented a vision of GILS as a *Global Information Locator Service* based on design principles including:

- Adoption of open standards
- Support for international use and a diversity of sources
- Implementation within the networked environment
- Recognition of the crucial role of intermediaries
- Access to other locators
- Support of information in different contexts and hierarchies.

Christian identified GILS as a mechanism to provide continuity across different time periods for world data centers as information creation in the future must be able to maintain use of long-term baseline data, using historical, present day, and future data sources interchangeably.

### 2.3.3. The Post-OMB 95-01 Implementation Period

By the December 31, 1996 deadline identified in OMB Bulletin 95-01, many agencies had completed their initial implementation of GILS. One of the first documents on GILS in 1997 was OMB Watch's second annual report on U.S. Federal GILS implementation (Henderson, 1997). The report recognized that many agencies have either minimally met requirements to implement GILS, and some agencies have done nothing at all. OMB Watch attributed this failure to a lack of specific goals and vision originating from OMB Bulletin 95-01 and to the lack of active involvement of the GILS Board, the oversight body established by the Bulletin. OMB Watch identified specific problems with GILS, including:

- GILS implementations which were limited to Web sites (and not accessible through alternative means)
- Lack of coordination between Web-based full text documents and GILS records



- Limited cataloging of digital resources resulting in less than meaningful electronic access to information described in GILS
- A wide-spread lack of awareness about GILS both among Federal employees and the public.

Ironically, at the time OMB Watch was pointing out problems and failures with the U.S. Federal GILS initiative, Harreld (1997) reported that the Government Information Locator Service was selected as one of the top ten finalists in the 1996 National Information Infrastructure Awards.

Writers on U.S. Federal GILS efforts may now be in a better position to explore and assess the extent to which agency GILS implementations are meeting the goals of OMB 95-01 and whether GILS is satisfying the expectations of various user communities. Actual agency implementations can be examined to see if they can support functions that some expected from GILS. For example, Sprehe (1997) questioned the value of linking GILS records to requirements included in EFOIA. Sprehe distinguished between information publications described by GILS and information contained in government records. EFOIA is intended to provide access to the latter while GILS is intended to provide access to the former. Critiques such as this, as well as assessments by organizations like OMB Watch, and evaluations such as the current study reported here can be a basis for improvements and changes to GILS policy and implementation.

#### 2.3.4. General Themes from the Literature

A number of key themes, issues, and perspectives on GILS emerged from the review of the literature. The investigators conducted ongoing literature review throughout the current evaluation study, and a number of key issues identified in this study are notable by their absence in the literature. The inclusion or absence of these issues in the literature may be indicative of the current strengths and weaknesses of GILS.

Themes identified in the literature include:

- **GILS for Public Access to Government Information:** Most of the GILS literature emphasized the public access aspect of GILS. Many sources cited in the literature review described the potential benefits of GILS for public access to government information. While some writers tie GILS to the management of information resources, the predominant characterization of GILS has been as a tool for improving public access.
- **Confusion about Information Resources Described by GILS Records:** While writers perceive GILS as a means to enhance public access to government information, the GILS literature identified little understanding or agreement on exactly what information was to be described in GILS records.
- **Integration of GILS and the Web:** A number of the articles noted the lack of integration of agency activity in support of Web sites and GILS. It appears that in many agencies, these two activities occurred in parallel with little cross communication, despite the fact that both activities intersect with the electronic access and dissemination of government information. One noticeable exception to the trend was cited in the 1997 OMB Watch report on GILS, which commended EPA for its hotlinks between GILS records and text of documents (Henderson, 1997).

The findings and results of this evaluation study (see Chapter 4) provide an interesting perspective to review what *was not* covered in the GILS literature in the past several years including:

- **Lack of Marketing and Promotional Support for GILS:** As evidenced in the literature, GILS did not have marketing or promotional support from the GILS Board or OMB. From both the professional and popular literature, there were no indications that OMB actively promoted the GILS concept beyond publication of OMB Bulletin 95-01. Within the environment of many Federal agencies, it

may be that marketing or promotional activity of a new service or program is not part of the agencies' cultures. Based on the literature, promotion and marketing of GILS to the agencies and the public was lacking.

- **Minimal Understanding of GILS As a Record Management Tool:** One of the purposes of GILS was to use locator records to enable agencies to better meet record management objectives. The literature contained no critical discussion as to the capability of GILS to support records management.
- **GILS Users:** A key provision of GILS policy was that GILS would enable the public to more effectively identify and access government information. Within the published literature about GILS, little attention is focused on users of GILS records. The absence of articles about such a central provision of the GILS initiative reveals a lack of awareness of the role of users of systems, services, and programs.
- **Management and Coordination of GILS:** What is most telling by its absence in the literature is a lack of coverage of management and coordination issues related to GILS.
- **Evaluation and Assessment of GILS:** The literature was notably silent about how GILS should be evaluated and assessed—either at the agency level or GILS as a government-wide initiative. To date, agencies have concentrated their efforts in becoming GILS compliant. Understanding GILS from an evolutionary perspective, it is possible that once agencies have satisfied the primary requirements to mount GILS records they will then go on to develop programs to evaluate the effectiveness of their efforts in promoting public access to government information. This hopeful outcome is not warranted by information in the GILS literature.

Overall, the literature provided substantial coverage of the U.S. Federal GILS effort, although the identification and critical discussion of issues and

problems with GILS policy and implementation was limited.

## 2.4. POLICY FINDINGS AND RECOMMENDATIONS

The review of selected policy instruments and literature suggests that there have been considerable discussion and debate about GILS in recent years. Based on the analysis of the policy instruments described in this chapter, there is a clear need to revise the existing OMB Bulletin 95–01. The findings and recommendations offered here are based on the discussion in this chapter. Additional policy findings and recommendations based on the current study's data collection (described in Chapter 3) will be presented in Chapter 4. While specifics for a revision of OMB 95–01 will require careful consideration by OMB–OIRA, the following general areas require attention for such a revision.

### Developing a Coherent Policy Environment for GILS

Current information policies and GILS are not well integrated (see Figure 2–2). Steps should be taken to better link GILS into other policy instruments that *implicitly* provide guidelines for access to and management of government information. The implicit references for GILS related activities in ITMRA, E.O. 13011, and Title 44 *U.S.C.* (Government Printing Office), for example, need to be made *explicit*. It may be appropriate to identify clearly the links to GILS in these and other instruments in a revised OMB Bulletin 95–01.

The coherence of the GILS policy environment suffers from a lack of *explicit* references to GILS, when, in fact, a policy instrument (e.g., ITMRA) deals with topics specifically related to GILS. To some degree a “codification” of guidelines and policies related to GILS (both implicitly and explicitly) may be able to clarify some of the existing ambiguity about GILS and its relationship to other policy instruments.

### Purpose and Definition of GILS

OMB Bulletin 95–01 outlined a number of purposes for a GILS and these have been expanded upon over the past 2 years. To some degree, the existing policy environment allows different people to interpret different meanings for the purpose, definition, and content of GILS. Both the public and policymakers have different expectations for what a GILS is, how the GILS is defined, and what a GILS should offer. According to groups like Taxpayer Assets Project and OMB Watch, people expect GILS to provide access to both the records describing government information as well as the full-text of that information.

There has been a pronounced focus on creating GILS records to improve public access, while ignoring the records management functions that GILS was intended to provide for agencies. The detail in OMB Bulletin 95–01 regarding implementation of the records management component of GILS is non-specific and leaves much to individual agency interpretation. Indeed, much of the literature and policy related to GILS stresses the public access aspect of GILS and *not* the records management component. A revised OMB Bulletin 95–01 should specify the purpose and definition of GILS in clear and precise terms.

### Role of OMB–OIRA

Inadequate specific guidance exists that clarifies how GILS is to be implemented, the specific nature and content of GILS records, and who has oversight for GILS implementation. On paper, the responsibility for establishing GILS rests with NARA, the Secretary of Commerce, GSA, and each executive agency, with oversight by the Government Information Locator Service Board. In addition, the Government Printing Office, through its online GPO Access program, is one of the primary points where the public encounters GILS.

Specific roles and responsibilities for OMB–OIRA, however, are not made clear in OMB Bulletin 95–01 but should be detailed in a revised policy guideline. Is OMB–OIRA responsible for coordinating these

efforts, for tasking other agencies or groups to be responsible for specific activities, for determining the degree to which others complete their responsibilities? To a large degree there is neither specificity as to OMB–OIRA responsibilities in these areas, nor is it clear as to the enforcement power it has to encourage others to assume GILS responsibilities and implement them effectively.

### Role of the GILS Board and Others Groups

OMB Bulletin 95–01 lists responsibilities for the GILS Board. Whether these responsibilities are appropriate or how the Board can promote its recommendations to OMB—or others in the government—is unclear. The administrative relationships among OMB, the GILS Board, various GILS working groups, and other IRM–related groups also is unclear. In addition, if the GILS Board fails to take on its responsibilities as outlined in OMB Bulletin 95–01, who then has oversight responsibility? These relationships, responsibilities, and oversight should be clarified. Specific responsibilities for the GILS Board, the CIO Council, OMB–OIRA, and other agencies/groups (e.g., the GILS SIG) must be better understood if the administration of GILS as a *government-wide* effort is to improve.

### Cross–Agency Cooperative Administration of GILS

E.O. 13011 attempted to create cross–agency cooperation, but (disappointingly) does not list the GILS Board or advisory committee as partners from which to “seek views” in terms of oversight. The degree to which agency GILS are administratively linked to other agency GILS—in a federated decentralized fashion as originally conceived—is unclear. Policy guidance for how such linkages should occur and the degree to which a particular agency or an interagency body (e.g., the CIO Council) is to take the “lead” in this area is unclear. It is clear, however, that GILS today is an *agency* information locator service and is not a government-wide locator service. Successful evolution into the next stage of GILS implementation requires policy

guidelines for the overall administrative leadership of GILS.

#### Enforcement and Oversight of Agency GILS Activities

The visions outlined in the report to the Information Infrastructure Task Force (1994) and in OMB Bulletin 95-01 describe GILS as a decentralized effort by Federal agencies. The lack of explicit supervision and coordination of such decentralized implementations, however, reflects an important policy vacuum. The assumption that people would voluntarily work together to realize the GILS vision appears to be questionable considering the tight budgets, smaller workforces, and larger workloads of the Federal government. Policy guidelines may be needed to clarify enforcement procedures and oversight responsibility to identify those agencies not making good efforts to implement GILS. For example, OMB Bulletin 95-01 has no explicit requirements for agencies to report on their GILS implementation and whether they met the deadlines outlined in the Bulletin. Further, once such agencies are identified, steps that will be taken—and by whom (e.g., OMB-OIRA?)—to obtain the agency's successful participation may also need to be made clear.

#### Standards for the GILS Record

OMB Bulletin 95-01 indicates that agency GILS will "...contain automated links to underlying databases to permit direct access to information identified in the GILS" (p. 4). This theme is continued in the 1995 PRA where it says that, for information in electronic format, agencies should move towards providing access to the underlying data (P.L. 104-13, Sec. 3506 (d)(1)(B)). But how, exactly will this be done? Who or what has responsibility to determine if the agencies have, in fact, done this or are working on it? And, what assurance is there that the agencies will all develop solutions that are, in fact, interoperable?

The current focus on GILS records within the government has been at the metadata level, where the records serve as pointers to locators of agency

resources, rather than the information itself. The guidance on the "level of detail" or the "specificity" of the locator information, despite the efforts of NARA, is not clear. Policy and direction is needed to clarify the "level of detail" that is appropriate in GILS records, how the standards for records development will evolve, and who or what are responsible for developing and testing such standards. This specificity will enable agencies to develop objectives against which to measure their progress in contributing to the GILS effort.

#### Relationship Between Agency Web Sites and GILS

There is a definite trend towards providing GILS access via Web sites as evidenced by some Federal agencies, state agencies, and international agencies. It may be time for a standard to be developed, that integrates Z39.50 with the Web, to allow for GILS to be offered via Web servers. The language offered by the World Wide Web Federal Consortium (1996) is a useful first step, but there are a number of policy issues regarding the arrangements between Web sites and GILS that could not be foreseen in December 1994 when 95-01 was developed. Further, the draft Web guidelines proposed by OMB (1996a) may offer a beginning point for integrating Web development with GILS development (Eschenfelder, et al., 1997). Policy guidelines should clarify possible relationships between Web efforts and GILS development. These policies should encourage experimentation and innovation.

#### User Feedback and Evaluation of GILS Efforts

GILS falls under GPRA as a program for which agencies need to develop performance measures and other assessment techniques. Section 3514 of the PRA ends by stating that any performance evaluation report should be based on "...performance results reported by agencies and shall not increase the collection of information burden on persons outside the Federal Government." This could inhibit the impetus for agencies to solicit user feedback on the usefulness of their GILS. More explicit policy can be developed in a revised OMB Bulletin 95-01 that links the next phase of GILS to GPRA and

encourages performance assessment based on user feedback and assessment.

## **2.5. LESSONS FROM THE POLICY ANALYSIS AND LITERATURE REVIEW**

The policy findings and recommendations offered in this chapter do not constitute a complete set of policy findings and recommendations related to the GILS effort. The investigators developed these findings and recommendations to inform the data collection activities described in Chapter 3. As such, this preliminary list of findings and recommendations shaped the protocol for the site visits, identified questions to be presented at focus group sessions, and clarified issues included in the survey distributed at the November 1996 GILS Conference. Chapter 4 includes additional policy findings and recommendations based on those data collection efforts.

During 1995–1996, after the appearance of OMB Bulletin 95–01, it is interesting to note the limited

attention to GILS—in terms of formal reference—in other key information access and management policies promulgated by the government. No direct reference to GILS in ITMRA, for example, is a lost opportunity to promote GILS into the larger information management community. The lack of mention of GILS as a priority or responsibility for the CIO Council formed in 1996 is also a lost opportunity to promote and extend GILS (Chief Information Officers Working Group, 1996).

To some degree, issues and problems identified with GILS and reported in Chapter 4 have their origin in the policy framework that created GILS, as discussed in this chapter. To the defense of the creators of OMB Bulletin 95–01, the GILS effort was an experiment for which there was limited knowledge about GILS, its creation, and implementation. The actual implementation experiences by agencies in the past 2 years have made a range of GILS issues visible. The current study has identified a number of these issues—reported in this chapter and in Chapter 4—that will require policy revisions if the U.S. Federal implementation of GILS is to be successful.

